

REMARKS

The Claimed Invention

The inventions of claims 27 to 34 are directed to a method of reducing viscosity of an aqueous solution containing psyllium using a polysaccharide.

These inventions comprise the step of "adding a polysaccharide to the psyllium" wherein the polysaccharide has a molecular weight of 20,000 or more, and a 2% by weight aqueous solution of the polysaccharide has a viscosity of 9.0cp or less (determined using a type B viscometer with Rotor No. 1, at 60 rpm and 25°C).

Novelty and non-obviousness of the present invention will be further discussed in detail. Psyllium forms a highly viscous dispersion liquid when hydrated and the highly viscous dispersion liquid further increases its viscosity when heated. For these reasons, application of psyllium to the food processing field is quite difficult in terms of its processing appropriateness, adverse effects on the texture, etc. The present invention addresses the novel problem of providing a technique for suppressing an increase in viscosity occurring due to hydration of psyllium.

The present inventors surprisingly found that an increase in viscosity of an aqueous solution comprising psyllium can be significantly suppressed if a certain kind of (the claimed) polysaccharide is added to the aqueous solution. The present inventors further studied and determined that a polysaccharide whose molecular weight is 20,000 or more and whose aqueous solution (2% by weight concentration) has a viscosity of 9.0cp or less, in other words, a polysaccharide having a characteristic of "a high molecular weight, low viscosity polysaccharide" has a significant effect of suppressing an increase in viscosity of an aqueous solution comprising psyllium. The present invention is based on this finding and thus provides a significant effect not anticipated by any of the cited references.

The Claimed Invention vs. The Cited References

Meer et al. disclose a powdered fiber laxative comprising psyllium powder, apple fiber, fructose, and gum arabic. Thus, the invention of Meer et al. also comprises a polysaccharide (gum arabic or apple fiber) when water is added to the fiber laxative. However, in Meer et al., the apple fiber is used merely as a source of dietary fiber (see

column 2, lines 34 to 42 in Meer et al.), and gum arabic is used for the purpose of merely providing a texture and an additional fiber (see column 2, lines 57 to 59 in Meer et al.).

The present invention was arrived at by the present inventors who found through trials and errors that a certain (claimed) polysaccharide, not disclosed in the Meer et al. patent, has a capability of reducing the viscosity of an aqueous solution of psyllium, and thus this significant effect of the present invention could not be obvious to those skilled in the art in view of Meer et al.

Sander discloses a laxative comprising psyllium coated with gum arabic that is a polysaccharide. However, in Sander, psyllium is coated with arabic for the purpose of improving dispersiveness of the psyllium, and thus "a method of reducing viscosity of an aqueous solution containing psyllium" containing the claimed polysaccharide having a molecular weight of at least 20,000 and the claimed viscosity is not disclosed. Sander discloses only an invention in which psyllium is coated with gum arabic but Sander neither discloses nor suggest a combination of a certain polysaccharide of the present invention and psyllium. Therefore, the present invention could not be anticipated by Sander.

Furthermore, since Sander does not disclose or suggest applicants' claimed polysaccharide, and thus the claimed invention's significant effect of decreasing viscosity of an aqueous solution of psyllium could not be obvious to those skilled in the art in view of Sander.

JP '558 discloses a composition for use in noodles containing a modified starch and psyllium seed gum. Thus, where water is added to the composition, the aqueous solution of JP '558 comprises psyllium and a polysaccharide. The polysaccharide however, does not meet the features of applicants' claimed polysaccharide. The invention of JP '558 was arrived at based on the finding that mixing of a composition for use in noodles with a modified starch and psyllium seed gum has an effect of preventing an alphasized noodle from deteriorating over time when the alphasized noodle is stored in a refrigerator or a freezer, while maintaining the superior texture, taste and flavor of the alphasized noodle. The invention of JP '558 neither discloses nor suggests decreasing viscosity of an aqueous solution containing psyllium by adding applicants' claimed polysaccharide and therefore, does not provide the effect accomplished by the claimed invention. Consequently, the present invention is neither anticipated by nor obvious from JP '558.

As described above, no cited reference discloses or suggests "a method of reducing viscosity of an aqueous solution comprising psyllium using a polysaccharide" having the molecular weight and viscosity features claimed or "a combination of a certain polysaccharide of the present invention and psyllium." Furthermore, no effect of the present invention could be anticipated on the basis of any of the cited references.

It is submitted that all claims are now of proper form and scope for allowance. Early and favorable consideration is respectfully requested.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 13-2855, under Order No. 19036/37425A from which the undersigned is authorized to draw.

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